

UW-IT Wi-Fi Services Requirements Guide:
PUBLIC SAFETY DISTRIBUTED ANTENNA SYSTEMS (“PS DAS”)

UW Facilities - Section 27 17 53 Wireless Communications

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OVERVIEW - UW-IT Wireless Services and Mobile Communications Requirements Guides

All UW projects for new construction and space renovations of 50,000 sq ft or more must incorporate the design and installation of the following Wireless and Mobile Communications Services:

WI-FI SERVICE - Service managed and operated by UW-IT Wireless Services Team.

PUBLIC SAFETY DISTRIBUTED ANTENNA SYSTEM (“PS DAS”) - Service managed and operated by EH&S with UW-IT Mobile Communications Team consulting.

CELLULAR DISTRIBUTED ANTENNA SYSTEM (“Cellular DAS”) - Service managed and operated by cellular carrier with UW-IT Mobile Communications Team consulting.

The following collection of requirements guides should help project participants better understand these services and how UW-IT Wireless Services and Mobile Communications teams are engaged and integrated into the overall project. While all

guides should be helpful for the Project Manager, some are geared toward specific teams.

UW-IT Wi-Fi Services Requirements Guide: Project Management

- Provides the UW Project Manager with information to help integrate the design and deployment of UW-IT Wi-Fi Services into the project plan.

UW-IT Wi-Fi Services Requirements Guide: Architecture and Engineering Designs

- Provides the Wi-Fi Design Engineer with information needed to create and deliver a Wi-Fi service design.

UW-IT Wi-Fi Services Requirements Guide: Service Installations

- Provides the Wi-Fi service installation team with information needed to install a UW-IT Wi-Fi service based on the final pre-installation design.

UW-IT Wi-Fi Services Requirements Guide: Post-Installation Surveys

- Provides the Wi-Fi post-installation survey team with information needed to test the installed UW-IT Wi-Fi service to ensure it meets service standards and all vetted service requirements.

UW-IT Requirements Guide: Public Safety Distributed Antenna Systems (Public Safety DAS)

- Provides EH&S and the Project Manager with information needed for the inclusion of a Public Safety DAS.

UW-IT Requirements Guide: Cellular Distributed Antenna Systems (Cellular DAS)

- Provides the Project Manager with information needed for the inclusion of a Cellular DAS.

OVERVIEW – Public Safety Distributed Antenna Systems (“PS DAS”)

The public safety groups within UW and our local communities rely on ubiquitous, quality communications systems to respond efficiently to emergencies and hazardous situations in UW spaces. These communication systems use radio frequencies (RF) owned by UW Facilities as well as the Puget Sound Emergency Radio Network (“PSERN”). To mitigate interference and reduction in signal strength in buildings, these

RF signals must be extended into UW spaces to work properly in those areas. Public Safety distributed antenna systems (“PS DAS”) perform this function.

PS DAS equipment typically includes a rooftop or elevated antenna that receives and sends signals to the nearest provider’s transmitter; ‘head end’ equipment - usually located in a major telecommunication closet in the building – that amplifies the signal and distributes it through an antenna system via cables installed throughout the building or space.

While other requirements may also apply, any new building of 50,000 sq ft or more is required to have a PS DAS installation. Other scenarios in which a new PS DAS must be installed include major renovations that remove a significant portion of an existing PS DAS. Contact Environmental Health & Safety (“EH&S”) about these and other requirements related to PS DAS.

While PS DAS cabling may be implemented by UW-IT, UW-IT does not offer a PS DAS service. However, UW-IT's Mobile Communications team does provide required PS DAS consulting services. These consulting services are necessary for PS DAS planning, design, and installation to ensure the PS DAS will work properly with UW-IT operated wireless and mobile services also in the area. The PS DAS equipment along with its on-going maintenance and support obligations are owned by EH&S. The equipment is purchased via capital project funding.

REQUIREMENTS

R1 - Required UW-IT Wireless Services and Mobile Communications Change Reviews and Approvals

Once service requirements have been collected and the service design process starts, any subsequent changes with the potential to impact the service requires review and advanced approval by the appropriate UW-IT service team before incorporation in the design and service implementation.

Service quality can be affected by many environmental and use-specific factors, all of which are considered in the service design process. Proposed changes to these factors - inclusive of customer requirements - after the onset of the design work will

be reviewed by the UW-IT Wireless Services team or Mobile Communications team, as appropriate, and considered in the context of the overall design. Some of the many factors considered in the design include the following:

- architecture (e.g., new room, change in wall location, stairwells, elevators, etc.);
- environment (e.g., building materials, furniture, cabling);
- space type (e.g., office space, lab, auditorium);
- people using the service (e.g., students, medical staff, researchers, guests);
- devices (other than laptops, tablets, and phones) using the service (e.g., cameras, freezers);
- apps using the service (e.g., Wayfinder);
- density of devices by location (e.g., 50 devices in small room vs 2 devices in large room);
- use profiles in each location (e.g., sporadic video streaming; students in large lecture hall simultaneously accessing Internet sites; big data uploads/downloads);
- appropriate RF frequencies;
- target delivery dates and project delays of six or more months which may require updates to equipment and equipment costs.

The UW-IT service teams appreciate your cooperative communication throughout the project regarding changes that have the potential to impact the resulting quality and delivery of the services.

R2 - UW-IT Wireless Services and Mobile Communications and Project-Related Communications and Coordination

Collaboration Space and Document Sharing. At the outset of each project, a UW-IT Business Analyst will create a dedicated online shared-access space where project-related information and documents can be accessed and managed by project team members. Documents in this space will include materials from the project's architecture team; UW-IT forms related to service requirements and installation details; the service design package; and more as needed.

Meetings. Project team members are required to attend various meetings relevant to their roles and project coordination efforts. These meetings may include one or more on-site walkthroughs; pre-design requirements identification; post-installation review; and regular (usually weekly) project team meetings. Meetings

may be called by the Project Manager, the UW-IT Business Analyst, or other project team members. Each participating project team – UW teams and third-party contractors – must ensure that an appropriate team member and/or leader attend all required meetings. The designated meeting attendees will be informed and up to date on the status of their team’s responsibilities and work.

Professional and Timely Communications. Each project participant is responsible for appropriate and timely communications via email, document sharing, ticket systems, etc. If in doubt as to who to contact, send email to help@uw.edu and specify the project name in the subject line.

R3 – General Requirements

The UW-IT consultation for the PS DAS implementation is required to address several components and overall ensure that the PS DAS installation is consistent with other implementations across campus. It will ensure that the standards defined by UW-IT's Mobile Communications are adhered to. The consulting review will look at the following:

- Use of currently approved equipment;
- Fire ratings and back-up power;
- Red flags that indicate the system may have issues or cause issues with other services e.g., PS DAS equipment placements near high-voltage cabling.

PROCESS

P1 - Process Input Materials, Information, Resources

- Architectural Floor Plans
- PS DAS design created by third party project vendor or vendor’s subcontractor

P2 - Process Output Materials, Information, Resources

- Copy of Project Team’s final design with as-builts sent to UW-IT's Mobile Communications team.

P3 - High-Level Process Overview

- A. Project confirms the need for the PS DAS.

- B. The project will assign an electrical contractor who in turn either creates the PS DAS design in-house or gets an appropriate, qualified subcontractor to create a PS DAS design.
- C. The design is shared with UW-IT via the UW-IT Business Relationship Managers who in turn will engage the Cabling Infrastructure team (if they are not already engaged with the project) as well as UW-IT's Mobile Communications team. The design is reviewed by these UW-IT groups along with the PS DAS owners and systems managers.
- D. Once a final design is approved by both UW-IT CI and Mobile Communications teams, installation can be coordinated through the project.
- E. Once installation is completed and the PS DAS is online, testing of the system will be done with appropriate officials including fire marshals and PSERN representatives. Upon successful testing, an official document/certification will be provided.
- F. Consulting close-out: an e-copy of the final design, as-builts, and the testing certification are provided to Mobile Communications who in turn file this material for future reference with other UW-IT documentation for this building.